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Infrared Spectroscopy for the Investigation of Molecular Association Mechanisms and the Fast Screening of Petroleum Fluid Constituents

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Far-infrared cluster spectroscopy enables a *direct* assessment of the interaction strengths and molecular association mechanisms for dimethyl-ether (DME) with polar petroleum constituents and provides inputs for thermodynamic models of strongly associating DME-fluid mixtures. In a second approach, we are developing a reliable spectroscopic screening approach for the identification of organic acids, which adhere strongly to rock surfaces and are suspected to play a crucial role for oil recovery mechanisms.